

AD-A079 989

ARMY ELECTRONICS RESEARCH AND DEVELOPMENT COMMAND WS--ETC F/G 4/2  
19304D GSRS, MISSILE NUMBER 1046, ROUND NUMBER V-66, 23 AUGUST --ETC(U)

AUG 79

UNCLASSIFIED

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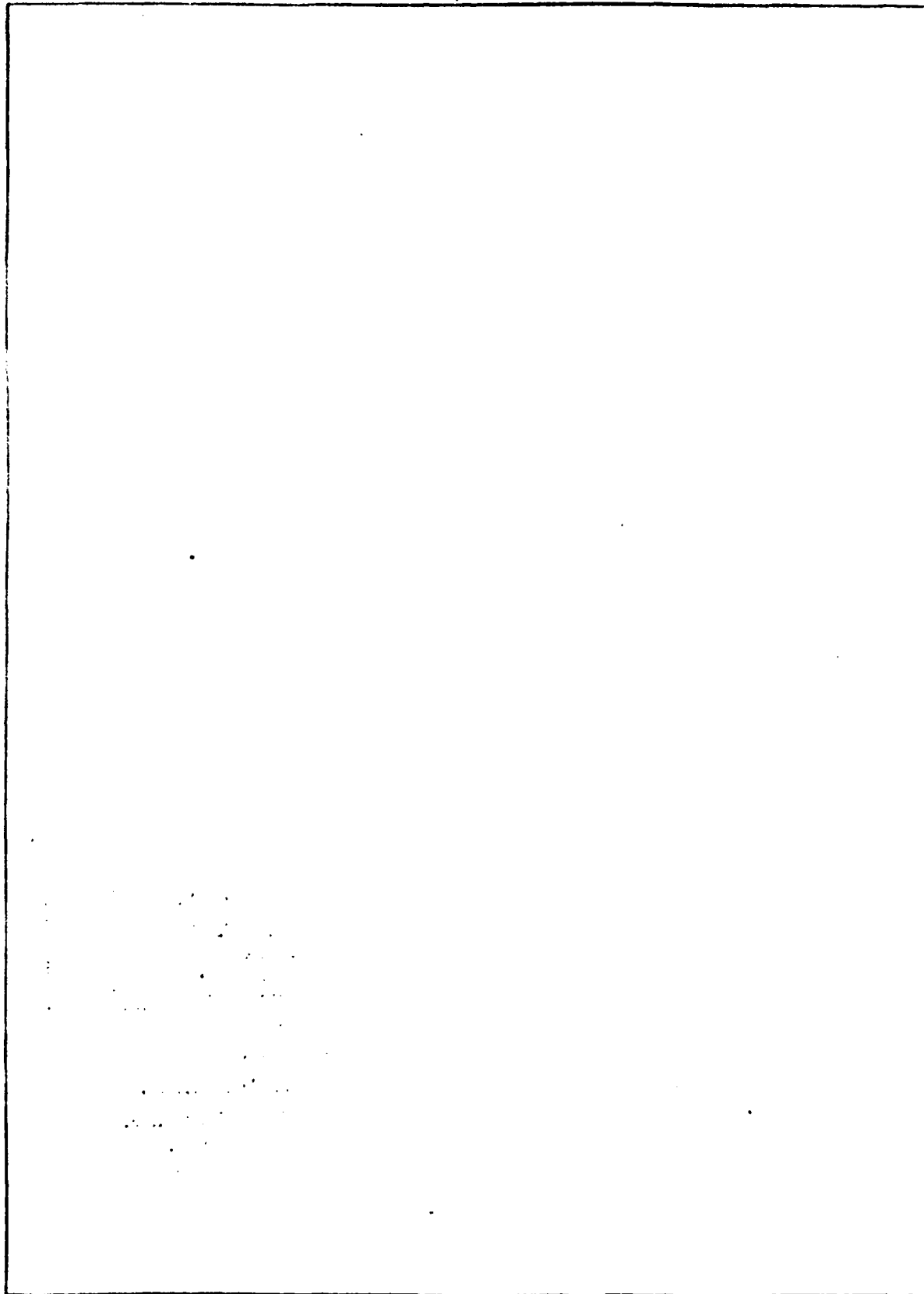


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2409 2410 2411 2412 2413 2414 2415 2416 2417 2418 2419 2420 2421 2422 2423 2424 2425 2426 2427 2428 2429 2430 2431 2432 2433 2434 2435 2436 2437 2438 2439 2440 2441 2442 2443 2444 2445 2446 2447 2448 2449 2450 2451 2452 2453 2454 2455 2456 2457 2458 2459 2460 2461 2462 2463 2464 2465 2466 2467 2468 2469 2470 2471 2472 2473 2474 2475 2476 2477 2478 2479 2480 2481 2482 2483 2484 2485 2486 2487 2488 2489 2490 2491 2492 2493 2494 2495 2496 2497 2498 2499 2500 2501 2502 2503 2504 2505 2506 2507 2508 2509 2510 2511 2512 2513 2514 2515 2516 2517 2518 2519 2520 2521 2522 2523 2524 2525 2526 2527 2528 2529 2530 2531 2532 2533 2534 2535 2536 2537 2538 2539 2540 2541 2542 2543 2544 2545 2546 2547 2548 2549 2550 2551 2552 2553 2554 2555 2556 2557 2558 2559 2560 2561 2562 2563 2564 2565 2566 2		



CONTENTS	PAGE
INTRODUCTION-----	1
DISCUSSION-----	1
MAP-----	2
TABLES	
1. Surface Observation Taken at 1208 MDT at LC-33-----	3
2. Anemometer-Measured Wind Speed and Direction, LC-33 Fixed Pole, Taken at 1208 MDT-----	4
3. Anemometer-Measured Wind Speed and Direction, Tower Levels 1, 2, 3, and 4, taken at 1208 MDT-----	5
4. LC-33 Pilot Balloon Measured Wind Data at 1208 MDT-----	6
5. Nick Site Pilot Balloon Measured Wind Data at 1208 MDT-----	8
6. SMR Significant Level Data at 1110 MST-----	10
7. SMR Upper Air Data at 1110 MST-----	11
8. SMR Mandatory Levels at 1110 MST-----	13

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## INTRODUCTION

19304D GSRS, Missile Number 1046, Round Number V-66, was launched from LC-33, White Sands Missile Range (WSMR), New Mexico, at 1208 MDT, 23 August 1979. The scheduled launch time was 1200 MDT.

## DISCUSSION

Meteorological data were recorded and reduced by the White Sands Meteorological Team, Atmospheric Sciences Laboratory (ASL), White Sands Missile Range, New Mexico. The data were obtained by the following methods:

### 1. Observations

#### a. Surface

(1) Standard surface observations to include pressure, temperature ( $^{\circ}\text{C}$ ), relative humidity, dew point ( $^{\circ}\text{C}$ ), density ( $\text{gm}/\text{m}^3$ ), wind direction and speed, and cloud cover were made at the LC-33 Met Site at T-0 minutes.

(2) Anemometer data were provided from existing pole-mounted and tower-mounted anemometers at LC-33. Monitor of wind speed and direction from one anemometer was also provided in the launch control room.

#### b. Upper Air

(1) Low level wind data were obtained from RPTS T-9 pibal observation at:

### SITE AND ALTITUDE

LC-33 1080 Meters

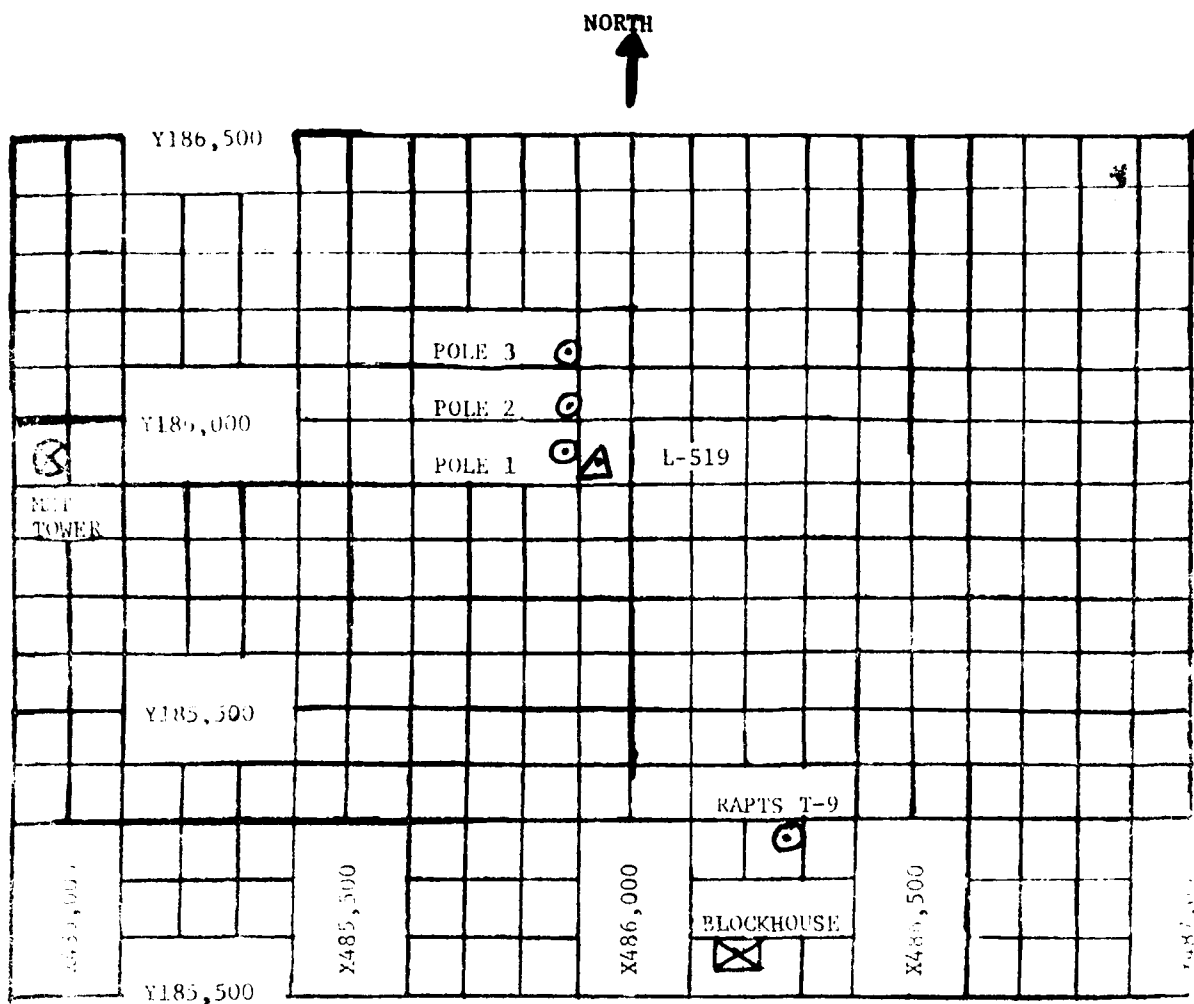
Nick 1020 Meters

(2) Air structure data (rawinsonde) were collected at the following Met Sites. Data were collected from surface to 28,000 feet in 500-foot increments.

### SITE AND TIME

SMR 1110 MST





1. NET TOWER - 4 Bendix Model T-20 Anemometers at 12 ft, 62 ft, 102 ft, and 202 ft with E/A recorders.
2. POLE ANEMOMETER - Bendix Model T-120 with E/A recorders.
  - (a) Pole #1 - 38.7 ft
  - (b) Pole #2 - 53.0 ft
  - (c) Pole #3 - 83.6 ft
3. RAPTS T-9 Radar Automatic Pilot-Balloon Tracking System T-9 Radar.

TABLE 1. Surface Observations Taken at 1208 MDT,  
23 August 1979, at LC-33, 19304D GSRS,  
Missile Number 1046, Round Number V-66.

ELEVATION	3,977.30	FT/MSL
PRESSURE	879.8	MBS
TEMPERATURE	28.0	°C
RELATIVE HUMIDITY	33	%
DEW POINT	10.1	°C
DENSITY	1010	GM/M <sup>3</sup>
WIND SPEED	.04	MPH
WIND DIRECTION	033	DEGREES
CLOUD COVER	CLEAR	

TABLE 2. LC-33 FIXED POLE ANEMOMETER-MEASURED WINDS

POLE #1			POLE #2			POLE #3		
T-TIME SEC	DIR DEG	SPEED MPH	T-TIME SEC	DIR DEG	SPEED MPH	T-TIME SEC	DIR DEG	SPEED MPH
-30	050	07	-30	060	08	-30	070	08
-20	055	07	-20	060	07	-20	050	08
-10	055	06	-10	067	06	-10	030	10
0.0	055	06	0.0	065	06	0.0	035	08
+10	050	09	+10	025	08	+10	030	09

Type 19304D CSRS, Missile No. 1046, Round No. V-66 launched  
 from LC-33 on 25 August 1979 at 1208 MDT.

POLE #1 = X485,874.29 Y185,958.90 H4018.74 39.7 ft. AGL

POLE #2 = X485,874.93 Y186,012.00 H4033.57 53.0 ft. AGL

POLE #3 = X485,877.29 Y186,116.06 H4063.92 83.6 ft. AGL

NOTE: WIND DIRECTIONS ARE REFERENCED TRUE NORTH.

TABLE 3. LC-33 METEOROLOGICAL TOWER ANEMOMETER-MEASURED WINDS (202 FT. TOWER)

LEVEL #1 12 ft.			LEVEL #2 62 ft.		
T-TIME SEC	DIR DEG	SPEED MPH	T-TIME SEC	DIR DEG	SPEED MPH
-30	023	07	-30	027	09
-20	026	08	-20	029	08
-10	032	07	-10	023	08
0.0	033	05	0.0	030	07
+10	058	06	+10	030	06
LEVEL #3 102 ft.			LEVEL #4 202 ft.		
T-TIME SEC	DIR DEG	SPEED MPH	T-TIME SEC	DIR DEG	SPEED MPH
-30	039	08	-30	033	09
-20	039	08	-20	030	09
-10	038	07	-10	024	07
0.0	044	06	0.0	031	08
+10	043	06	+10	030	07

WTSM Coordinates: X484,982.64 Y185,957.73 H3983.00 (base)

Type 19304 D GPS, Missile No. 1046, Round No. V-66 launched  
from LC-33 on 23 August 1979 at 1208 MDT.

NOTE: WIND DIRECTIONS ARE REFERENCED TRUE NORTH.

## PILOT BALLOON MEASURED WIND DATA

TABLE 4

RELEASED FROM LC-33 DATE 23 August 1979 TIME 1208 MDT  
 RELEASE POINT COORDINATES (WSTM) X= 486,037.24 Y= 182,350.16 H= 3,977.30  
 MISSILE TYPE 19304 DCSIS MISSILE NO. 1046 ROUND NO. V-66  
 MISSILE LAUNCHED FROM LC-33 DATE 23 August 1979 TIME 1208 MDT

WIND DIRECTIONS ARE REFERENCED TRUE NORTH.

FOURTY = METERS AGL.

HEIGHT AGL	DIRECTION DEGREES	SPEED MPH
50	033	04.0
30	031	05.0
60	028	05.5
70	025	06.0
120	022	06.5
150	023	07.0
180	023	07.5
210	023	08.0
240	023	08.0
270	023	08.5
300	022	08.5
330	022	08.5
360	021	08.5

HEIGHT AGL	DIRECTION DEGREES	SPEED MPH
390	022	05.5
420	023	07.5
450	024	07.5
480	024	06.5
510	019	06.5
540	013	06.5
570	007	06.5
600	001	06.0
630	002	05.5
660	003	04.5
690	004	04.0
720	004	03.0
750	020	03.5

[illegible][illegible]

## PILOT BALLOON MEASURED WIND DATA

TABLE 5

RELEASED FROM NICK SITE DATE 23 August 1979 TIME 1208 MDTRELEASE POINT COORDINATES (WSTM) X= 470,734.56 Y= 255,775.64 H= 4,126.57MISSILE TYPE 19304D GSP MISSILE NO. 1046 ROUND NO. V-66MISSILE LAUNCHED FROM LC-33 DATE 23 August 1979 TIME 1208 MDT

NOTE: WIND DIRECTIONS ARE REFERENCED TRUE NORTH.

HEIGHTS - METERS AGL.

HEIGHT AGL	DIRECTION DEGREES	SPEED MPH
SFC	310	06.0
30	331	03.5
60	031	00.5
90	030	03.5
120	028	06.5
150	025	05.0
180	022	05.0
210	020	05.5
240	018	06.0
270	012	06.5
300	005	06.5
330	006	06.0
360	007	05.5

HEIGHT AGL	DIRECTION DEGREES	SPEED MPH
390	010	05.0
420	012	04.5
450	001	01.5
480	350	04.0
510	343	04.5
540	325	05.0
570	332	05.5
600	328	05.5
630	319	04.0
660	310	05.0
690	309	01.5
720	307	05.0
750	309	05.0

[illegible]



STATION ALTITUDE 3997.00 FEET  
 23 AUG. 79 1110 HRS MST  
 ASCENSION NO. 201

STATION ALTITUDE 3997.00 FEET  
 23 AUG. 79 1110 HRS MST  
 ASCENSION NO. 201

TABLE 6

PRESSURE	GEOMETRIC ALTITUDE	TEMPERATURE	WIND DIRECTION	WIND SPEED
MILLIBARS	MSL FEET	AIR TEMP DEGREES CENTIGRADE	WIND DIRECTION	WIND SPEED KNOTS
879.1	3997.3	11.0	11.0	11.0
866.8	4037.9	5.1	5.1	5.1
853.0	4072.7	1.9	1.9	1.9
752.8	4518.4	-5.0	-5.0	-5.0
700.0	10441.1	-9.0	-9.0	-9.0
613.4	14024.7	-13.2	-13.2	-13.2
563.6	16237.0	-19.2	-19.2	-19.2
555.6	16621.1	-23.7	-23.7	-23.7
509.2	18891.3	-28.7	-28.7	-28.7
500.0	19301.0	-30.0	-30.0	-30.0
458.8	21559.9	-32.0	-32.0	-32.0
400.0	24907.1	-33.4	-33.4	-33.4
374.4	26570.7	-34.1	-34.1	-34.1
350.8	28138.1	-34.0	-34.0	-34.0

STATION ALTITUDE 3997.30 FEET MSL  
23 AUG. 79  
ASCENSION NO. 201

UPPER AIR DATA  
23500-0284  
S M R  
TABLE 7

GEODETIC COORDINATES  
32.48034 LAT DEG  
106.42307 LONG DEG

GEOMETRIC ALTITUDE MSL FEET	PRESSURE MILLIBARS	TEMPERATURE AIR DEWPOINT DEGREES CENTIGRADE	REL. HUM. PERCENT	DENSITY GM/CUBIC METER	SPEED OF SOUND KNOTS	WIND DATA DIRECTION (T) SPEED KNOTS	INDEX OF REFRACTION
3997.3	879.1	30.0	31.0	1004.5	680.2	30.0	1.000278
4000.0	879.0	30.0	31.0	1004.5	680.2	30.0	1.000278
4500.0	804.0	26.4	25.5	1000.8	673.6	22.9	1.000260
5000.0	849.2	24.5	27.9	989.9	673.5	12.0	1.000257
5500.0	834.4	23.5	26.9	976.5	672.1	357.9	1.000251
6000.0	819.8	22.4	25.9	963.2	670.6	338.4	1.000245
6500.0	805.5	21.3	24.9	950.1	669.5	328.1	1.000239
7000.0	791.4	20.2	23.9	937.1	668.2	307.4	1.000234
7500.0	777.6	19.2	22.9	924.3	666.9	231.0	1.000228
8000.0	764.0	18.1	21.8	911.8	665.6	198.2	1.000223
8500.0	750.6	17.1	20.7	899.2	664.3	165.5	1.000219
9000.0	737.2	16.1	20.0	886.1	663.3	143.9	1.000215
9500.0	724.1	15.2	20.5	873.1	662.2	119.4	1.000211
10000.0	711.2	14.3	20.2	860.4	661.1	105.9	1.000207
10500.0	698.5	13.3	20.3	847.9	659.9	98.0	1.000203
11000.0	685.7	11.9	23.3	835.7	658.6	90.8	1.000201
11500.0	673.2	10.4	26.2	823.6	656.6	83.4	1.000200
12000.0	660.9	8.9	29.1	814.7	654.9	83.3	1.000197
12500.0	648.9	7.5	32.1	803.9	653.2	83.7	1.000195
13000.0	637.0	6.0	35.0	793.4	651.5	77.9	1.000193
13500.0	625.4	4.5	37.9	783.0	649.8	72.3	1.000190
14000.0	614.0	3.1	40.9	772.8	648.1	65.0	1.000188
14500.0	602.4	1.9	37.8	761.6	646.6	60.9	1.000183
15000.0	591.1	.7	34.4	751.0	645.1	58.2	1.000178
15500.0	580.0	-5.5	31.1	740.2	643.7	41.2	1.000174
16000.0	569.1	-1.7	27.7	729.6	642.2	18.1	1.000170
16500.0	558.4	-2.6	19.3	718.4	641.0	357.7	1.000165
17000.0	547.7	-3.2	15.7	707.4	640.3	344.5	1.000161
17500.0	537.3	-3.8	15.2	696.5	639.5	337.0	1.000158
18000.0	527.0	-4.4	14.8	685.8	638.8	331.2	1.000156
18500.0	516.9	-5.0	14.3	674.3	638.1	329.5	1.000153
19000.0	507.1	-5.5	14.0	663.6	637.5	323.0	1.000150
19500.0	497.3	-5.7	14.1	652.9	637.2	333.1	1.000147
20000.0	487.7	-6.9	14.3	642.7	635.9	337.3	1.000145
20500.0	478.2	-8.0	14.5	632.0	634.3	339.3	1.000143
21000.0	469.0	-9.1	14.7	621.5	633.1	341.0	1.000140
21500.0	459.9	-10.3	15.0	610.2	631.8	339.3	1.000138
22000.0	450.7	-11.7	15.4	600.4	630.0	338.2	1.000136
22500.0	441.8	-13.2	15.8	591.7	628.3	337.1	1.000134
23000.0	433.0	-14.6	16.3	583.3	626.5	336.0	1.000132

STATION ALTITUDE 3997.30 FEET MSL  
23 AUG. 79  
ASCENSION NO. 261

UPPER AIR DATA  
2050000261  
S M R

GEODETIC COORDINATES  
32.48034 LAT DEG  
106.42307 LONG DEG

TABLE 7 (CONT)

GEOMETRIC ALTITUDE MSL FEET	PRESSURE MILLIBARS	TEMPERATURE AIR DEGREES CENTIGRADE	REL. HUM. PERCENT	DENSITY GM/CUBIC METER	SPEED OF SOUND KNOTS	WIND DATA DIRECTION, DEGREES (T)	SPEED KNOTS	INDEX OF REFRACTION.
23500.0	424.3	-16.1	16.7	574.9	624.7	335.0	39.5	1.000130
24000.0	413.9	-17.6	17.1	562.7	622.9	334.1	40.6	1.000128
24500.0	407.6	-19.0	17.6	550.6	621.1	333.2	41.4	1.000126
25000.0	399.5	-20.5	18.0	539.6	619.4	333.7	42.1	1.000124
25500.0	391.3	-21.2	17.7	541.0	618.4	334.3	43.9	1.000122
26000.0	383.3	-22.0	17.4	531.6	617.4	334.7	45.5	1.000119
26500.0	375.5	-22.8	17.0	522.4	616.5	333.7	46.3	1.000117
27000.0	367.8	-23.2	16.7	512.5	615.0	332.0	47.1	1.000115
27500.0	360.2	-23.6	16.4	502.7	613.5			1.000113
28000.0	352.8	-23.9	16.1	493.6	612.1			1.000111

STATION ALTITUDE 3997.30 FEET MSL  
23 AUG. 79 1110 HRS MST  
ASCENSION I.O. 201

MANDATORY LEVELS  
2350000201  
S M R

TABLE 8

PRESSURE GEOPOTENTIAL		TEMPERATURE		REL. HUM.		WIND DATA	
MILLIBARS	FEET	AIR DEGREES	DEWPOINT DEGREE	PERCENT		DIRECTION DEGREES (TN)	SPEED KNOTS
850.0	4969.	24.6	4.9	28.		13.4	3.6
800.0	6099.	20.9	-1.1	25.		322.5	1.5
750.0	8515.	17.0	-5.5	21.		104.0	2.5
700.0	10431.	13.5	-9.0	20.		99.0	4.4
650.0	12455.	7.6	-8.1	32.		04.2	4.7
600.0	14594.	1.6	-11.4	37.		60.3	0.3
550.0	16872.	-3.0	-25.4	10.		340.8	15.4
500.0	19334.	-5.4	-28.0	14.		331.7	24.8
450.0	22015.	-11.8	-32.6	15.		330.1	33.5
400.0	24925.	-20.4	-38.4	10.		333.7	42.0